800.85

Comments on Population Effect Paper by BJ Miller

David Fullerton
July 20, 2000

I can't comment on the science behind the correlation. I just want to focus on the presentation and interpretation of data, especially w/r to the EWA. I think that this work will be very helpful to us.

1. It is misleading to put dollar figures on the water to provide the water to generate 1% increases per species when, as you recognize in the paper:
   - Much of this water is not lost to the Projects. In our gaming, we found that much of the EWA benefits are derived from simple reoperation of the Projects rather than from water purchases (which represent paying money to compensate for reduced deliveries). You cannot simply equate risk with actual loss.
   - The same water can benefit many species. An export cut in the spring will benefit all fish at risk from exports. Then the water cut will either go as outflow, providing another benefit or will be backed upstream to eliminate the water cost.

   Therefore, I think you need to look at some sort of melded cost if you are going to talk about money. You might be able to extract some data from CALSIM runs or from the gaming to provide a basis for this calculation.

2. You are dealing with statistical results here. The EWA is dealing with actual recorded salvage. We need to think about how to connect the two. As you recognize, if fish densities are not constant across the period of sensitivity, then it may be possible to protect more fish at lower cost. That is the foundation of our current efforts in the EWA. Fish densities at the pumps can vary by orders of magnitude over periods of sensitivity. If the export numbers in the statistical analysis are related to total fish salvage, then the EWA may, in fact, be able to provide fish protection much more cheaply than would be implied by a statistical analysis.

3. On page 4, footnote 3, don't you mean to say that 60.6% would survive? Saying 61% may be misleading.

4. On page 12, you give the steady state equation for X2. But the Delta is never in a steady state condition. How great is the error? My understanding is that X2 goes out easily, but comes back upstream slowly. This might open up the door to cheaper approaches to getting favorable X2.